



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,749	01/22/2001	Conal O'Neill		1254

7590

02/12/2003

John R. Ross, III
Ross Patent Law Office
P.O. Box 2138
Del Mar, CA 92014

EXAMINER

CHEN, TIANJIE

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 02/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/766,749

Applicant(s)

O'NEILL, CONAL

Examiner

Tianjie Chen

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-10, 12-18 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 4, 11 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Non-Final Rejection

Claim Objections

1. Claims 6, 13, and 21 are objected to because of the following informalities:

In line 2 of claims 6, 13, and 21; "magentic" should be changed to --magnetic--, respectively.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in

(1) an application for patent, published under 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent,

except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language;"

2. Claims 1-3, 5-10, 12-18, and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Soeno et al (US 6,246,552).

With regard to claims 1-3 and 8-10, Soeno et al shows a disc drive actuation system for precisely positioning a read/write head over a selected track of a rotatable disc (Figs. 18, 19 and 32), the system including: A) a flexure (means) 31 (Column 27, line 41), B) a slider (means) 2 (Column 13, line 44), C) a read/write head 1 firmly attached to the slider, D) a first drive unit (means) 5 (Fig. 32, column 1, line 55) for pivoting the flexure to position the read/write head (means) approximately over the selected track, which is a voice coil motor, E) a microactuator 4 (Figs. 18 and 3) including: 1) an inner inactive region 44, 2) a first outer inactive region (left side wall

Art Unit: 2652

of 43), 3) a second outer inactive region (right sidewall of 43), 4) a first piezoelectric section (left of 45) mounted between the first outer inactive region and the inner inactive region, 5) a second piezoelectric section (right of 45) mounted between the second outer inactive region and the inner inactive region, wherein the inner inactive region is firmly attached to the slider (means) and both of the outer inactive regions being firmly attached to the flexure (means) (Column 6, lines 35-37), 6) an inherent electrical circuit for energizing the first and the second piezoelectric sections to cause them to expand and contract in order to precisely position the read/write head (means) over the selected track (Column 34,, lines 44-57), the circuit and the piezoelectric sections being configured such that the first piezoelectric section expands when the second piezoelectric section contracts and the first piezoelectric section contracts when the second piezoelectric section expands, which is shown in Fig. 3, wherein the above mentioned action causes the slider on 44 to rotate as shown in Fig.

With regard to claims 5 and 12, Soeno et al further shows a flex circuit 33 (Fig. 21, column 28, line 27) for providing electrical connections to the read/write head and the microactuator.

With regard to claims 6 and 13, Soeno et al further shows that the disc drive actuation system is a magnetic disc drive actuation system (Column 6, lines 24-26).

With regard to claims 7 and 14, Soeno et al further shows that the disc drive actuation system is an optical disc drive actuation system (Column 6, lines 24-26).

With regard to claim 15, Soeno et al shows a disc drive actuation system, including: A) a flexure, B) a microactuator connected to the flexure, C) a slider connected to the microactuator 4 (Fig. 6; column 20, line 13-26), wherein the slider is independently supported by the microactuator on 44, and D) a read/write head

Art Unit: 2652

connected to the slider, wherein the microactuator is configured and arranged to displace the read/write head with respect to tracks of a rotatable disc in response to control signals applied to the microactuator, wherein the independent support of the slider by the microactuator allows for precise displacement of the read/write head.

With regard to claim 16 and 17, Soeno et al further shows that the microactuator includes at least piezoelectric sections 411a, 411b, 412a a, and 412b (Column 2; column 20, lines 19-27); including: A) a first active piezoelectric section 411a, B) a second active piezoelectric section 411b poled out of phase with the first active piezoelectric section (Fig. 7A), C) two inactive end sections sidewalls of 43), and D) an inactive middle section (the area between the piezoelectric sections), wherein the first active piezoelectric section is sandwiched between one of the two inactive end sections and the inactive middle section, wherein the second active piezoelectric section is sandwiched between the other of the two inactive end sections and the inactive middle section.

With regard to claim 18, Soeno et al further shows that each of the two inactive end sections are connected to the flexure and wherein the slider is connected to the inactive middle section (Column 6, lines 35-36).

With regard to claim 20, Soeno et al further shows a flex circuit 33 (Fig. 21, column 28, line 27) for providing electrical connections to the read/write head and the microactuator.

With regard to claim 21, Soeno et al further shows that the disc drive actuation system is a magnetic disc drive actuation system (Column 6, lines 24-26).

With regard to claim 22, Soeno et al further shows that the disc drive actuation system is an optical disc drive actuation system (Column 6, lines 24-26).

Allowable Subject Matter

3. Claims 4, 11 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

- As the closest reference, Soeno et al (US 6,246,552) shows an actuator system wherein, the first outer inactive region and the second outer inactive region are connected to the flexure and the slider is connected to the inner inactive region, but fails to show that the first outer inactive region and the second outer inactive region are connected to the slider and the flexure is connected to the inner inactive region.
- Applicant assumes that this configuration allows a lateral movement of the slider without torque or friction being applied to the slider (Specification, p. 9, last three lines).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

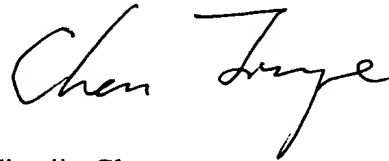
- US006359758B1 to Boutaghou shows a microactuator between flexure and suspension.
- US006414823B1 to Crane et al shows a microactuator with coils.
- US006362933B1 to Sampietro et al shows a microactuator.

Art Unit: 2652

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-6037 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

A handwritten signature in cursive script, appearing to read "Chen Tianjie".

Tianjie Chen
Examiner
Art Unit 2652

February 7, 2003